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(54) **APPLICATION REPORTING IN AN APPLICATION-SELECTABLE USER INTERFACE**

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USPC **715/767**; 715/808

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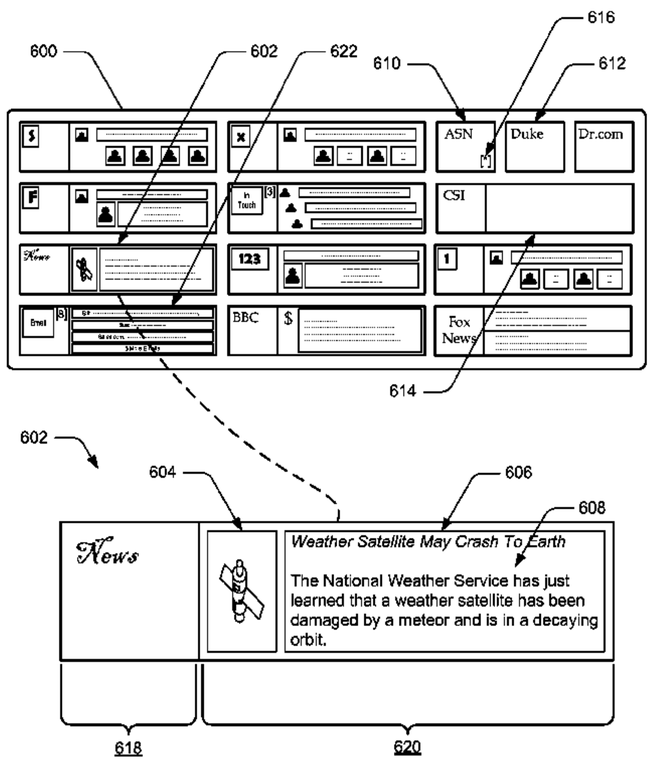
(57) **ABSTRACT**

This document describes techniques for application reporting in an application-selectable user interface. These techniques permit a user to view reports for applications in a user interface through which these applications may be selected. By so doing, a user may quickly and easily determine which applications to select based on their respective reports and then select them or their content through the user interface.

16 Claims, 11 Drawing Sheets



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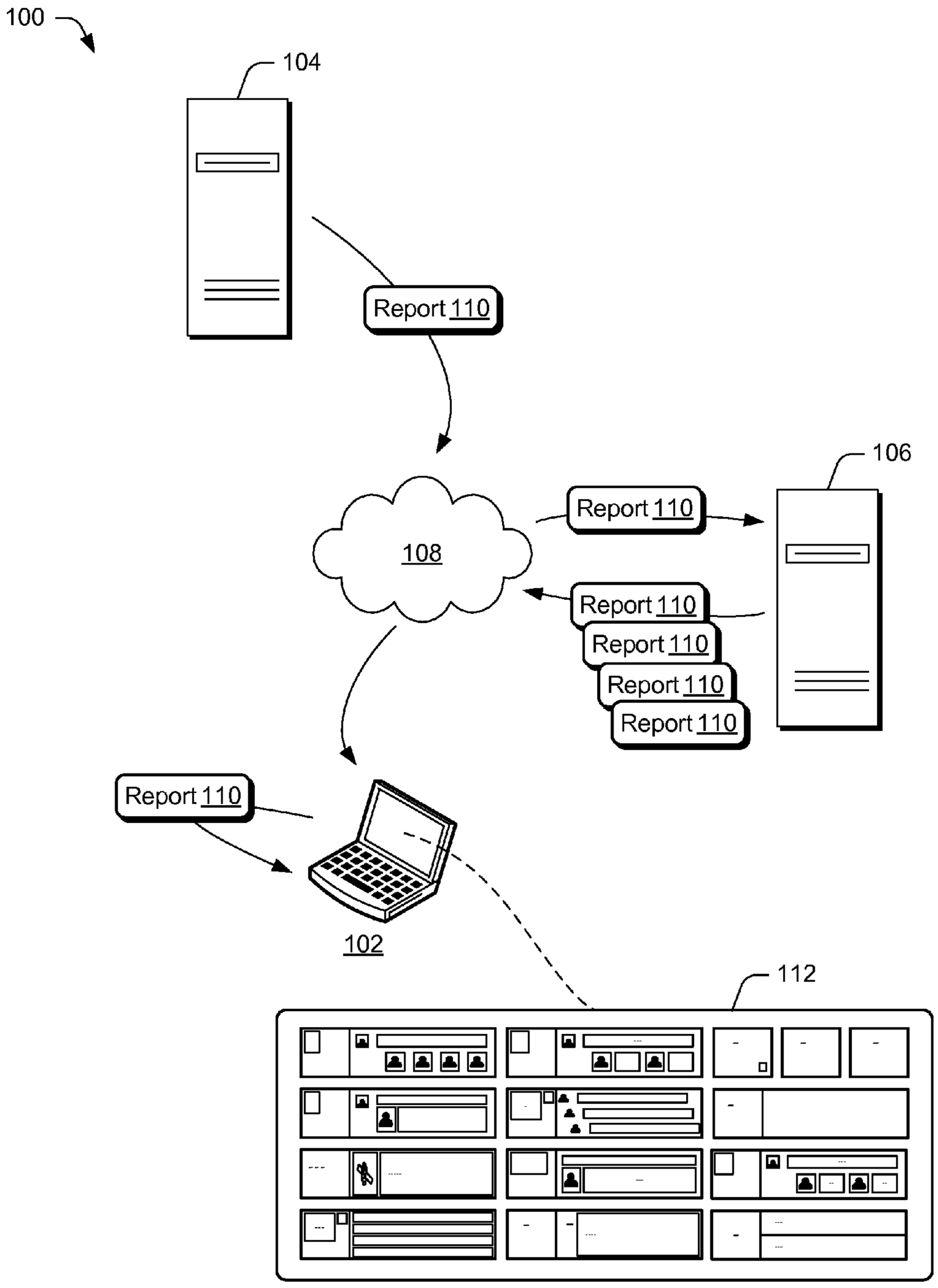

100
104
Report 110
106
108
Report 110
Report 110
Report 110
Report 110
Report 110
Report 110
102
112

Fig. 1

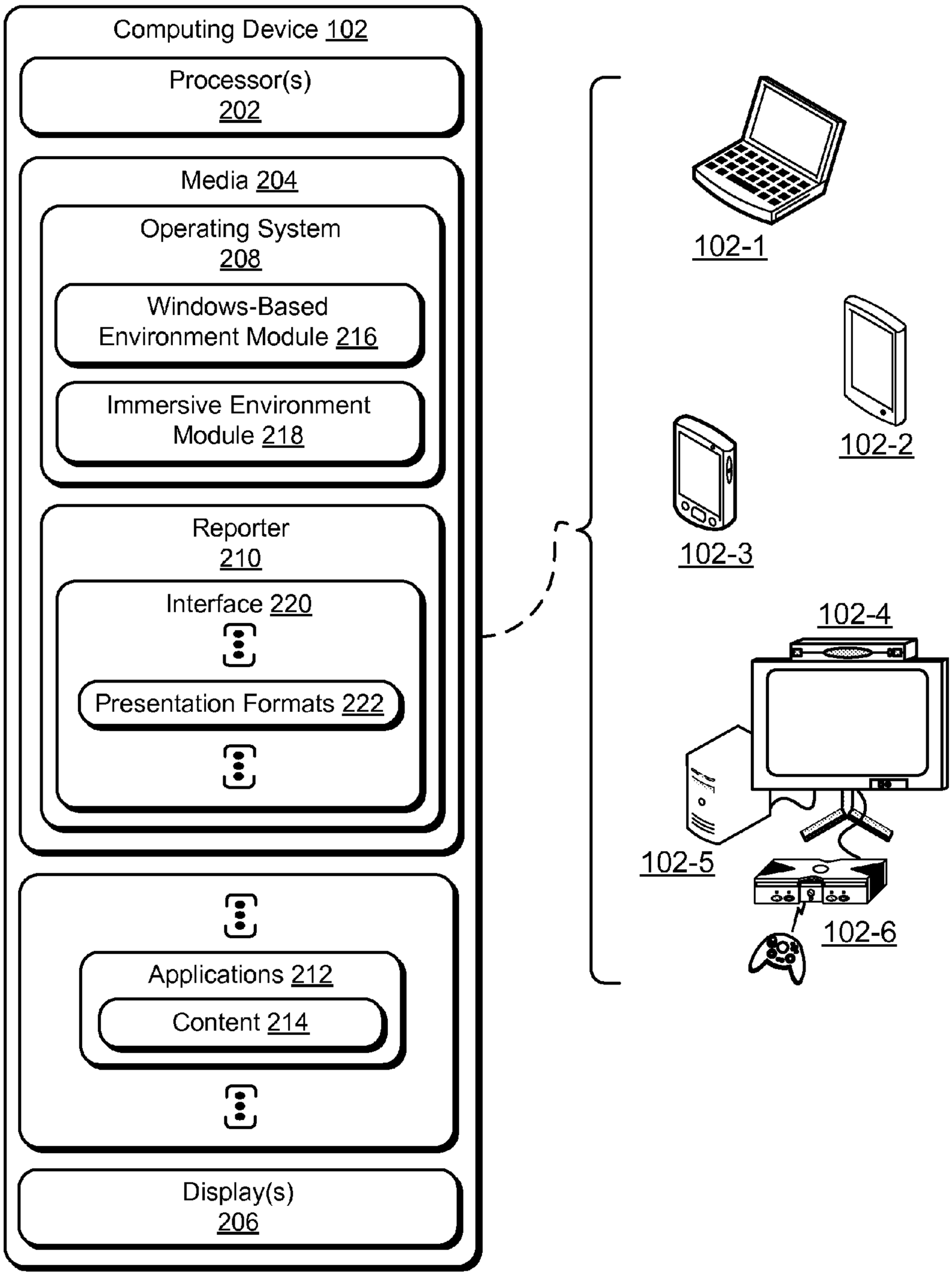

Computing Device 102
Processor(s) 202
Media 204
Operating System 208
Windows-Based Environment Module 216
Immersive Environment Module 218
Reporter 210
Interface 220
Presentation Formats 222
Applications 212
Content 214
Display(s) 206
102-1
102-2
102-3
102-4
102-5
102-6

Fig. 2

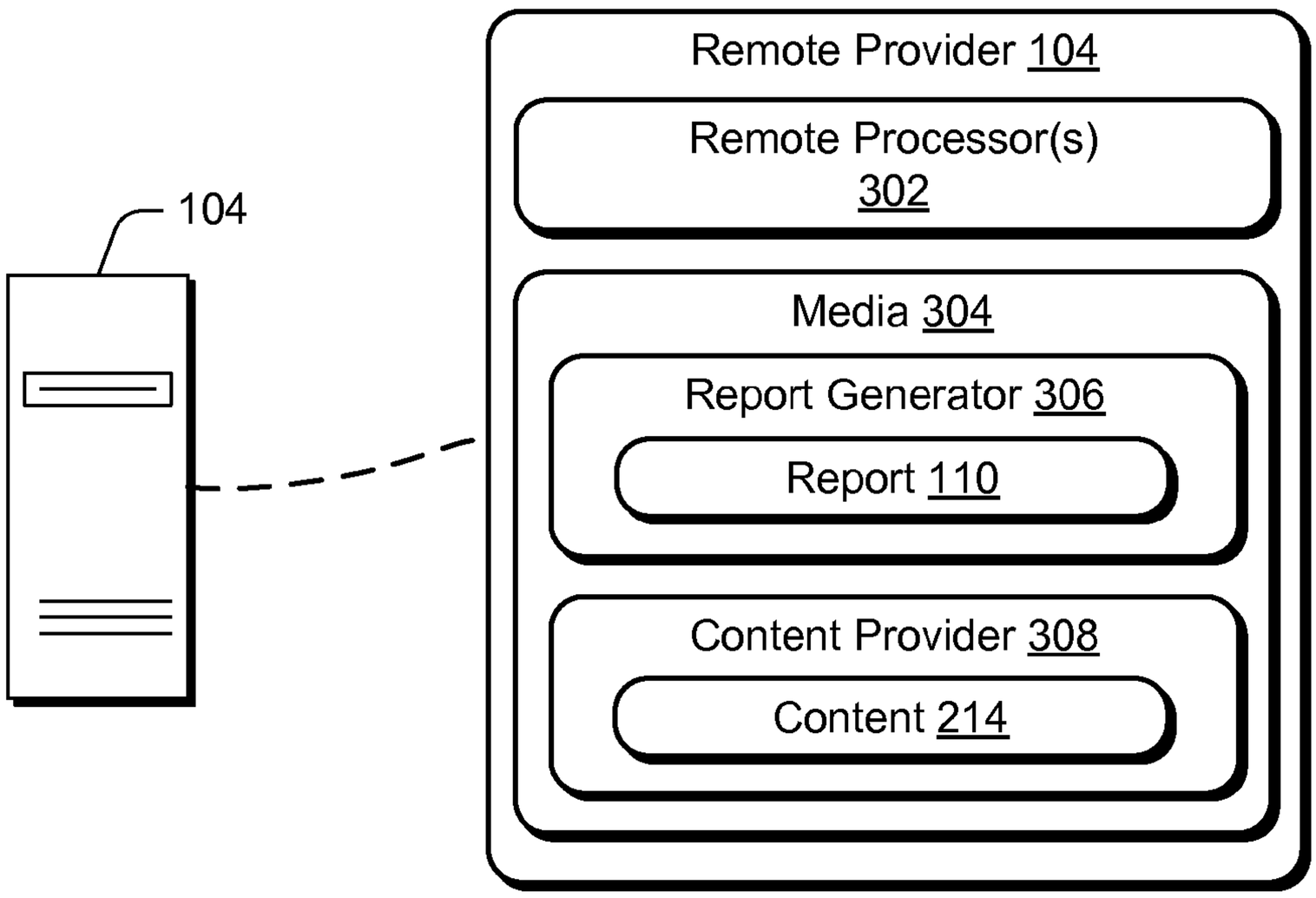

104
Remote Provider 104
Remote Processor(s)
302
Media 304
Report Generator 306
Report 110
Content Provider 308
Content 214

Fig. 3

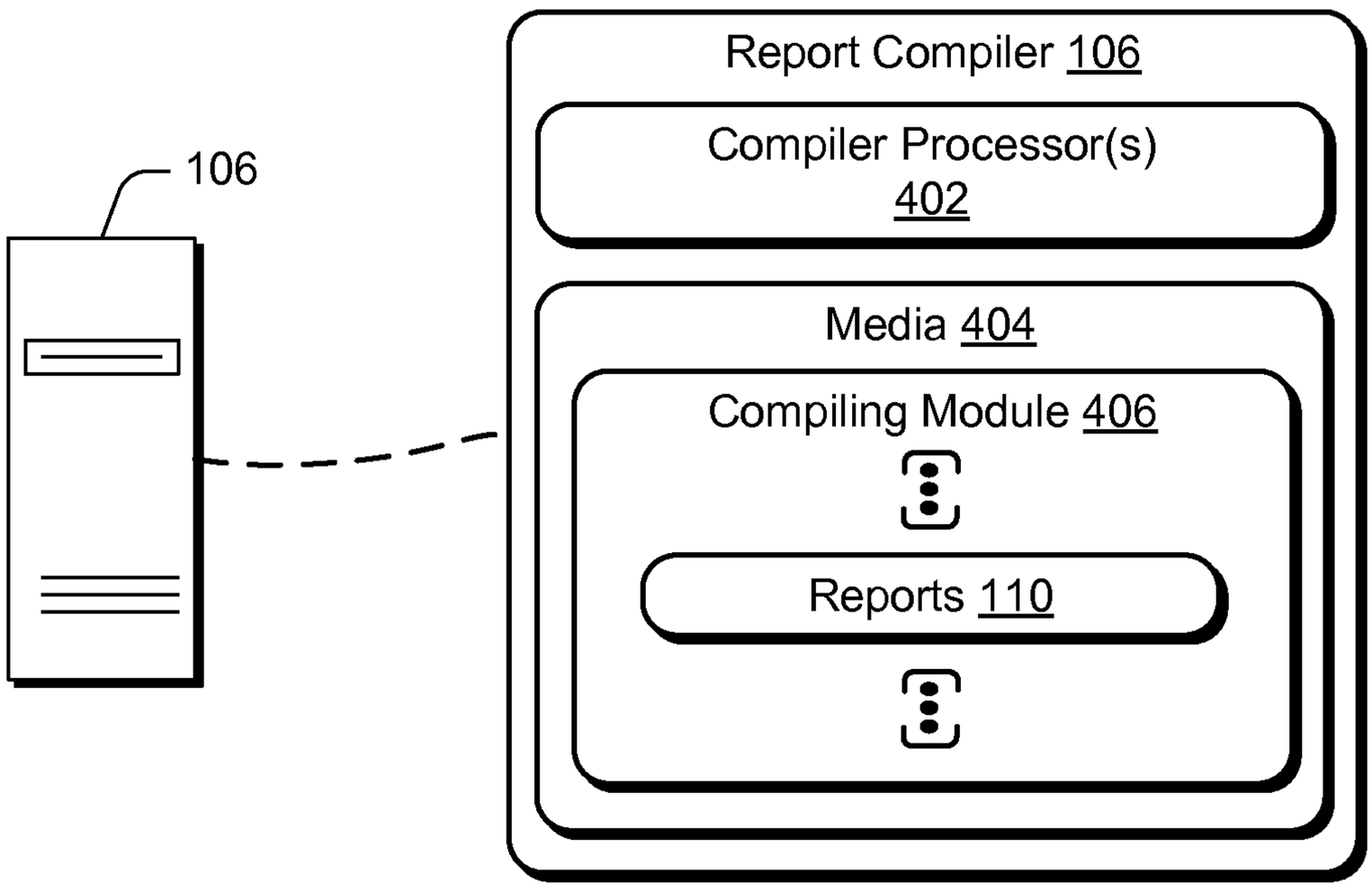

106
Report Compiler 106
Compiler Processor(s)
402
Media 404
Compiling Module 406
Reports 110

Fig. 4

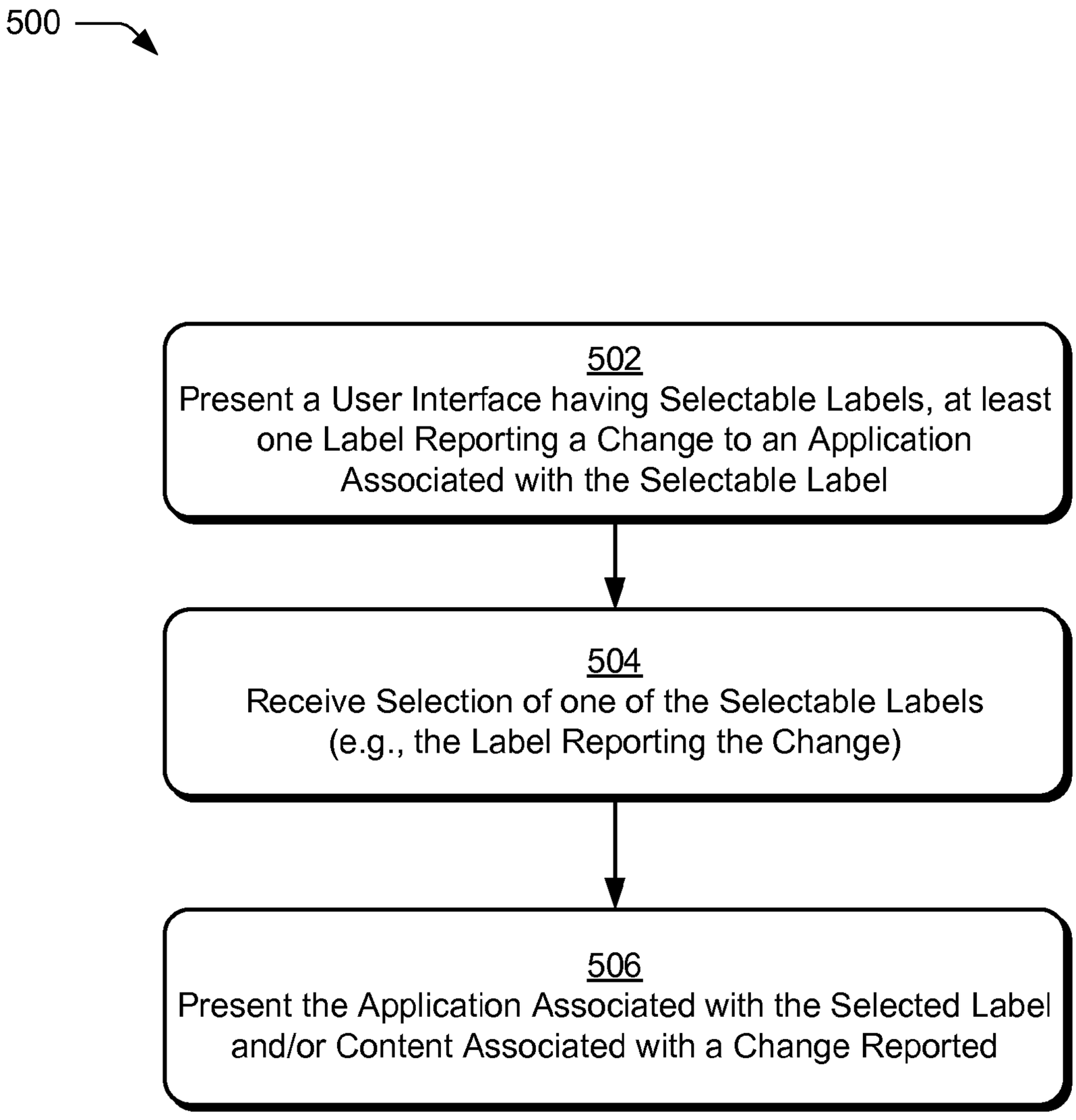

500
502
Present a User Interface having Selectable Labels, at least one Label Reporting a Change to an Application Associated with the Selectable Label
504
Receive Selection of one of the Selectable Labels (e.g., the Label Reporting the Change)
506
Present the Application Associated with the Selected Label and/or Content Associated with a Change Reported

Fig. 5

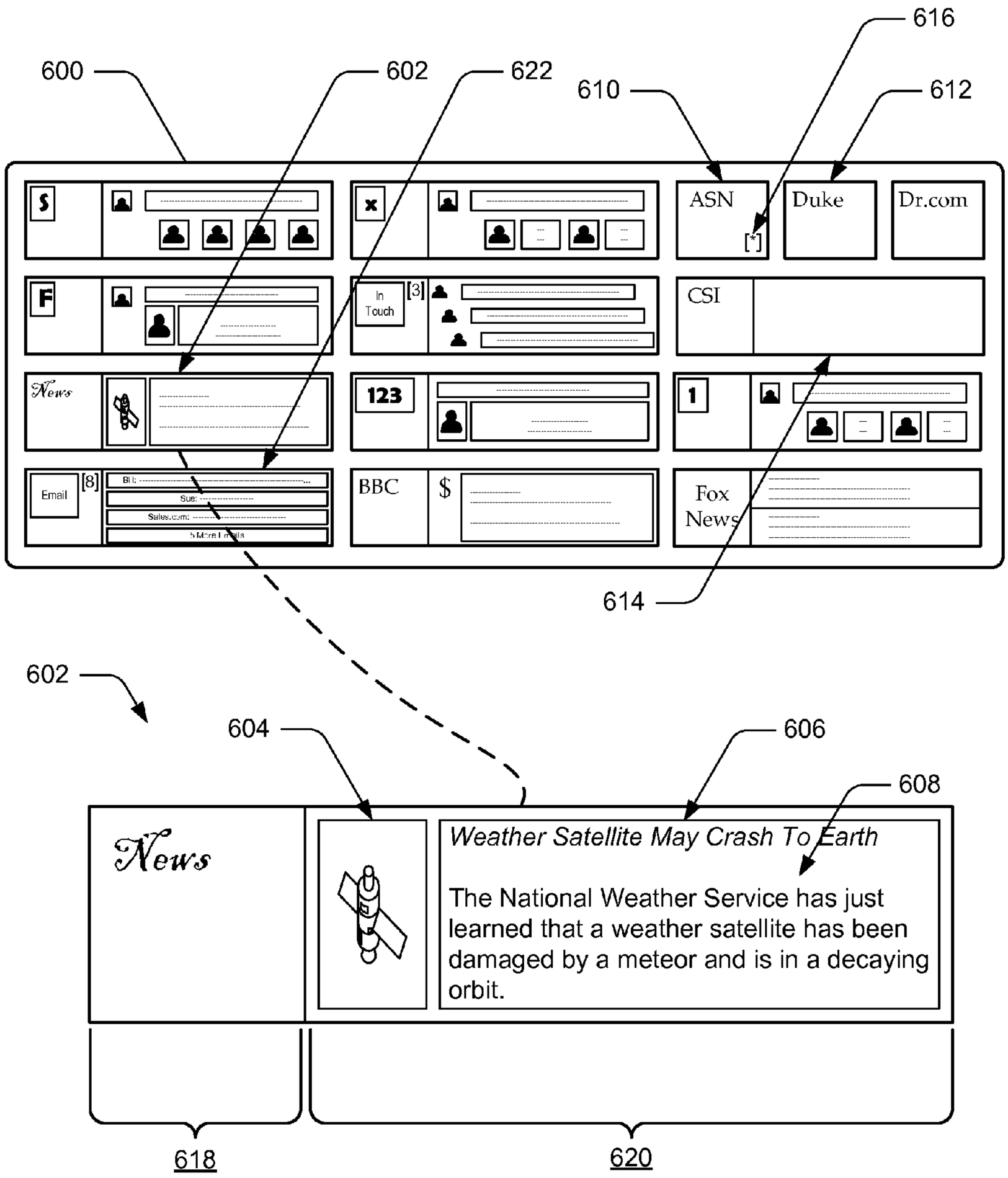
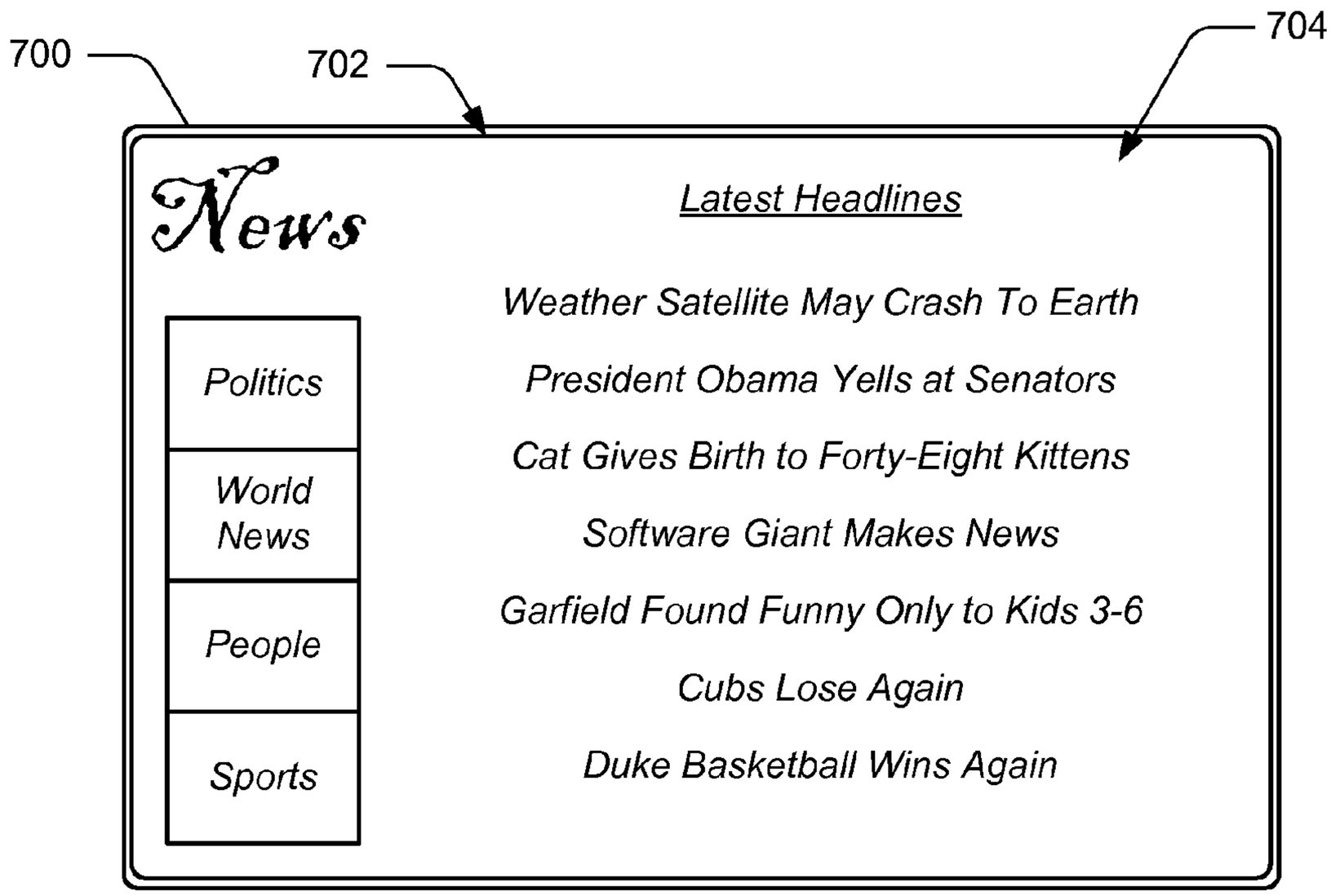

600
602
622
610
616
612
ASN
[*]
Duke
Dr.com
F
In Touch
[3]
CSI
News
123
1
Email
[8]
Bill:
Sue:
Sales.com:
5 More Emails
BBC
$
Fox News
614
602
604
606
608
News
Weather Satellite May Crash To Earth
The National Weather Service has just learned that a weather satellite has been damaged by a meteor and is in a decaying orbit.
618
620

Fig. 6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702
704
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Latest Headlines
Weather Satellite May Crash To Earth
President Obama Yells at Senators
Cat Gives Birth to Forty-Eight Kittens
Software Giant Makes News
Garfield Found Funny Only to Kids 3-6
Cubs Lose Again
Duke Basketball Wins Again
Politics
World News
People
Sports

Fig. 7

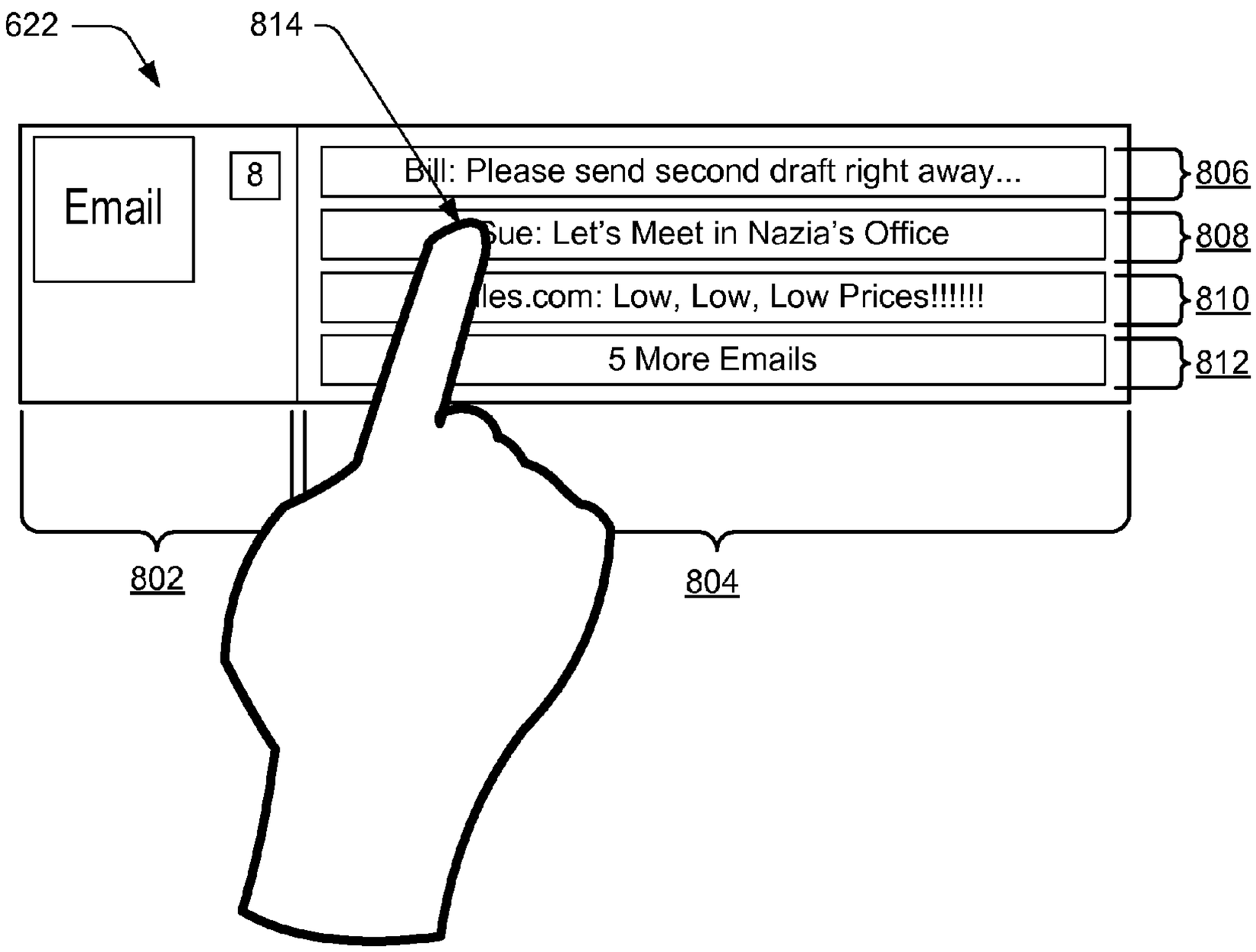
622
814
Email
8
Bill: Please send second draft right away...
Sue: Let's Meet in Nazia's Office
les.com: Low, Low, Low Prices!!!!!!
5 More Emails
806
808
810
812
802
804

Fig. 8

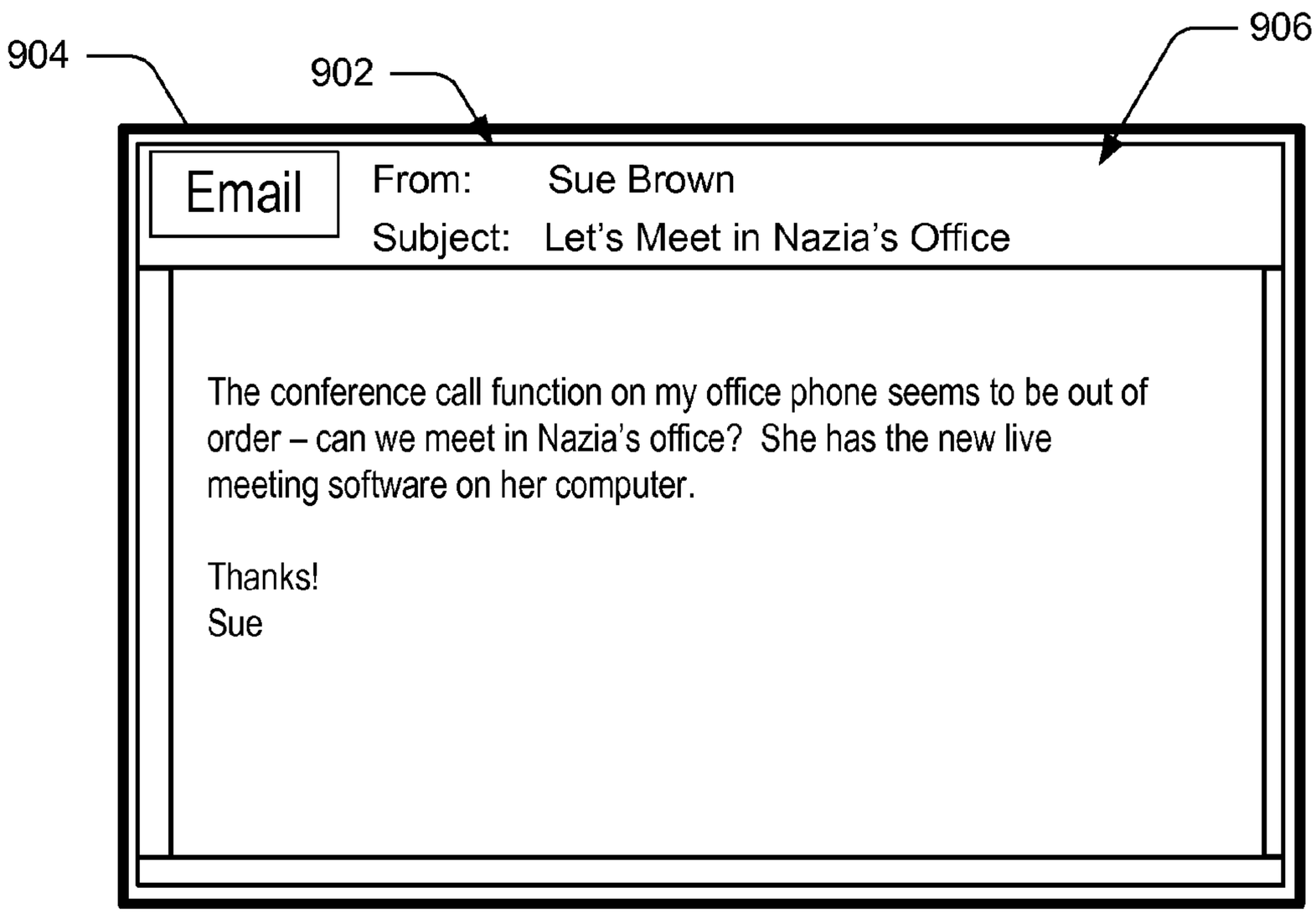
904
902
906
Email
From: Sue Brown
Subject: Let's Meet in Nazia's Office
The conference call function on my office phone seems to be out of order – can we meet in Nazia's office? She has the new live meeting software on her computer.
Thanks!
Sue

Fig. 9

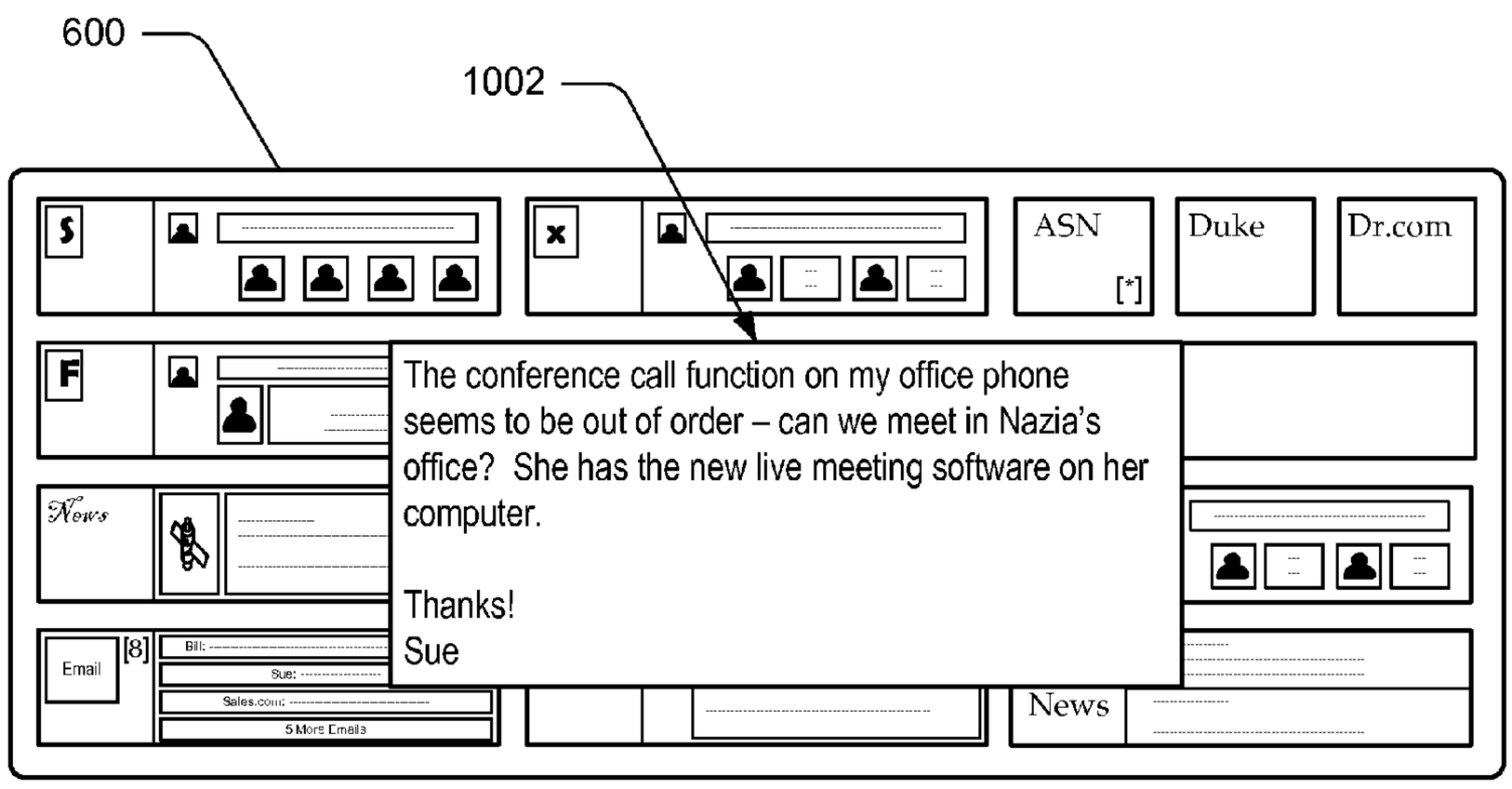
600
1002
ASN
[*]
Duke
Dr.com
The conference call function on my office phone seems to be out of order – can we meet in Nazia's office? She has the new live meeting software on her computer.
Thanks!
Sue
News
Email
[8]
Bill:
Sue:
Sales.com:
5 More Emails
News

Fig. 10

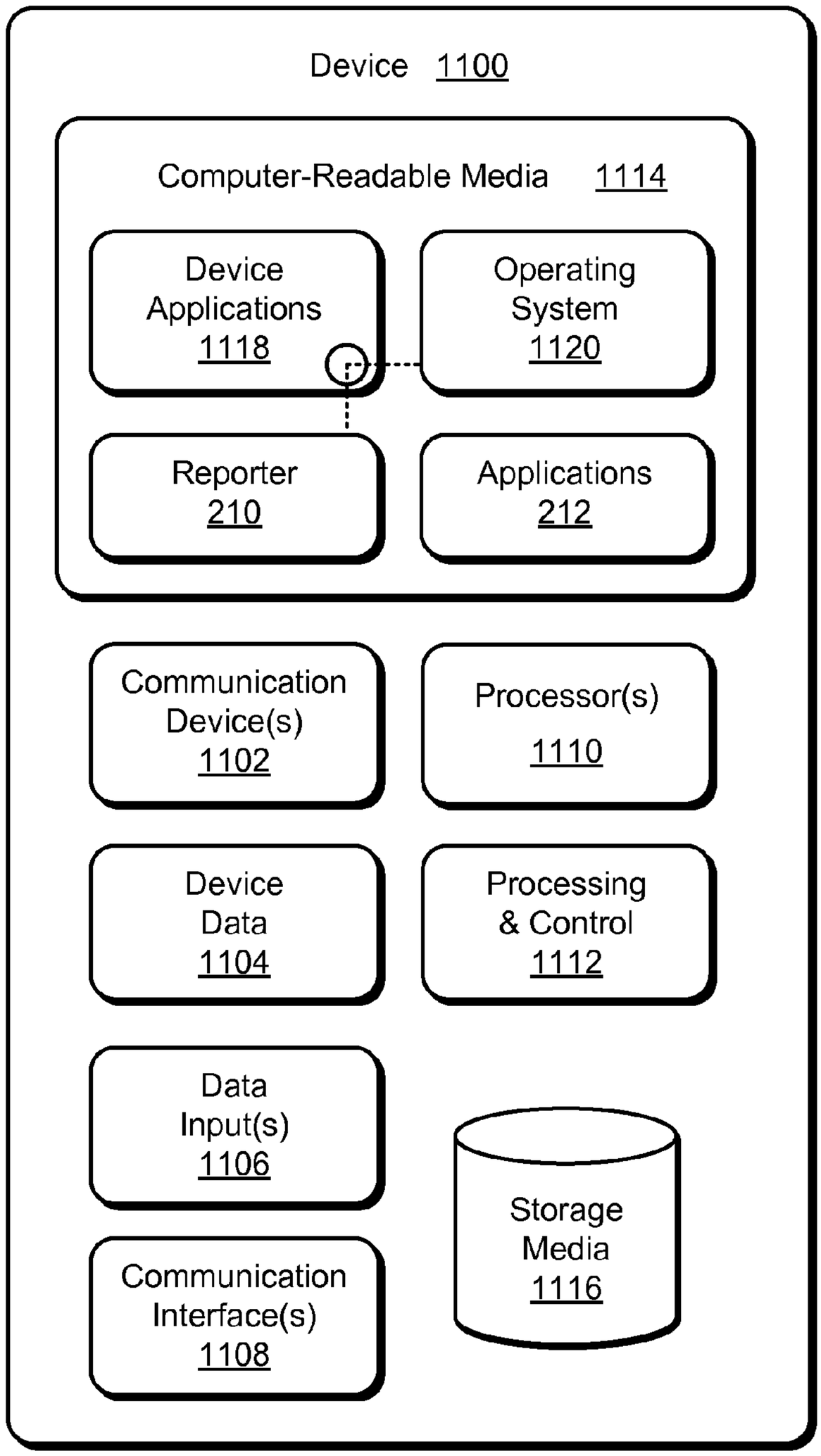
Device 1100
Computer-Readable Media 1114
Device Applications 1118
Operating System 1120
Reporter 210
Applications 212
Communication Device(s) 1102
Processor(s) 1110
Device Data 1104
Processing & Control 1112
Data Input(s) 1106
Storage Media 1116
Communication Interface(s) 1108

Fig. 11

APPLICATION REPORTING IN AN APPLICATION-SELECTABLE USER INTERFACE

BACKGROUND

Conventional operating systems permit users to launch applications, often through a user interface having selectable icons for the applications. In some cases a user selects to launch an application from this user interface and does not care whether there is anything new for that application.

In many cases, however, users launch applications to find out what is new in those applications. A user wishing to find out what is new in her applications, for example, typically selects an icon for a desired application, in response to which the conventional operating system launches the application. This application then opens and, assuming it is one that presents content, presents that content. For some applications, such as news or social-networking websites, the application retrieves content from a remote source and then presents that content. It is at this point that the user sees the content, which may or may not be new since the last time the user viewed content for that application.

The user may continue this process of selecting applications, in response to which they are launched and present content, and then viewing the presented content to find out what, if anything, is new. Following this process will permit a user to see what is new in her applications, but doing so takes significant amounts of time and effort. This process also expends computing and bandwidth resources. Worse still, in some cases her applications may not have any new content, in which case all of this time, effort, and resources are wasted.

SUMMARY

This document describes techniques for application reporting in an application-selectable user interface. These techniques permit a user to view reports for applications in a user interface through which these applications may be selected. By so doing, a user may quickly and easily determine which applications to select based on their respective reports and then select them through the user interface.

This summary is provided to introduce simplified concepts for application reporting in an application-selectable user interface that is further described below in the Detailed Description. This summary is not intended to identify essential features of the claimed subject matter, nor is it intended for use in determining the scope of the claimed subject matter. Techniques and/or apparatuses for application reporting in an application-selectable user interface are also referred to herein separately or in conjunction as the "techniques" as permitted by the context.

BRIEF DESCRIPTION OF THE DRAWINGS

Embodiments for application reporting in an application-selectable user interface are described with reference to the following drawings. The same numbers are used throughout the drawings to reference like features and components:

FIG. **1** illustrates an example system in which techniques for application reporting in an application-selectable user interface can be implemented.

FIG. **2** illustrates an example embodiment of the computing device of FIG. **1**.

FIG. **3** illustrates an example embodiment of the remote provider of FIG. **1**.

FIG. **4** illustrates an example embodiment of the report compiler of FIG. **1**.

FIG. **5** illustrates an example method for application reporting in an application-selectable user interface.

FIG. **6** illustrates an example user interface having fifteen selectable labels.

FIG. **7** illustrates an example presentation of a selected application in an immersive environment.

FIG. **8** illustrates a selectable label of FIG. **6** along with selectable sections reporting changes.

FIG. **9** illustrates an example presentation of a selected application in a windows-based environment.

FIG. **10** illustrates a pop-up window having content associated with a change to an application.

FIG. **11** illustrates an example device in which techniques for application reporting in an application-selectable user interface can be implemented.

DETAILED DESCRIPTION

Overview

This document describes techniques and apparatuses for application reporting in an application-selectable user interface. These techniques enable a user to see a report from an application that may or may not be currently executing and to select this application. If the application is executing, the techniques present the application responsive to the selection. If the application is not already executing the techniques first execute the application.

Assume, for example, that a user wishes to check what is new for her fifteen favorite applications. Assume that the user viewed four of these applications earlier during the day, but did not view the other eleven. Thus, some of these four applications may still be executing, thought that is not required. These techniques present, in a user interface from which these fifteen applications may be selected, reports for each of the applications, assuming any reports have arrived since the respective applications where last selected.

By way of example, assume that reports have been received for two of the four applications viewed earlier in the day. One of these applications is local to the user's computing device, namely an email application. The techniques report, in an application-selectable user interface, that eight emails have arrived since the user last used the email application. The techniques also indicate some content associated with one or more of these emails, such as from whom they were received (e.g., Suzy Brown, Sales.com, etc.).

Assume that the other of the two applications is a social-networking website and that a report has been received that indicates that a friend of the user has added an entry to her social-networking page. The techniques indicate this in the user interface, and may also present content from the entry, such as "Bill Jones tagged you in a photo" along with a thumbnail image associated with Bill Jones (e.g., his picture).

Assume that a third application has received a report, this third application being a marketing website that has not recently been viewed by the user. The techniques report that this marketing website has a big sale going on through tomorrow.

As this example illustrates, the techniques can provide a user interface through which a user can view reports associated with multiple applications and select to present those applications. Here the user interface reports that a friend tagged the user, that a sale is on, and that eight emails from various entities have been received. Further still, the user interface shows that the other twelve applications have nothing new to report.

With all of this information at the user's fingertips, she may decide which application to select and which not to. She may select the social-networking website application to see the image in which she is tagged, the marketing application to see more about the sale, the email application to see the full content of one or more of the eight emails, or forgo selecting any of the applications. Thus, the user may decide that none of these reports are interesting enough to select the applications. In all of these cases the techniques permitted the user to make quick, easy, and informed decisions about what applications to select or not to select.

This is but one example of the many ways in which the techniques enable users to see reports from, and select application through, a user interface. Numerous other examples, as well as ways in which the techniques operate, are described below.

This discussion proceeds to describe an example environment in which the techniques may operate, methods performable by the techniques, and an example apparatus below.

Example Environment

FIG. **1** illustrates an example environment **100** in which techniques for application reporting in an application-selectable user interface can be embodied. Environment **100** includes a computing device **102**, remote provider **104**, optional report compiler **106**, and communication network **108**, which enables communication between these entities. In this illustration, computing device **102** receives reports **110** from three sources, remote provider **104**, report compiler **106**, and an application executing on computing device **102** (this application is shown in FIG. **2**). Reports **110** indicate what is new or of potential interest for the selectable applications, such as a change to an application's content or status (e.g., a new email, entry, or article, or that a software update or expiration is approaching, to name just a few). Computing device **102** presents user interface **112**, which includes selectable labels for applications and reports some or all of the information received in reports **110**.

FIG. **2** illustrates an example embodiment of computing device **102** of FIG. **1**, which is illustrated with six examples devices: a laptop computer **102-1**, a tablet computer **102-2**, a smart phone **102-3**, a set-top box **102-4**, a desktop computer **102-5**, and a gaming device **102-6**, though other computing devices and systems, such as servers and netbooks, may also be used.

Computing device **102** includes or has access to computer processor(s) **202**, computer-readable storage media **204** (media **204**), and one or more displays **206**, four examples of which are illustrated in FIG. **2**. Media **204** includes an operating system **208**, reporter **210**, and applications **212**, each of which may provide content **214**.

Operating system **208** includes or has access to window-based environment module **216** and/or immersive environment module **218**. Applications selected through the techniques can be presented through a windows-based or immersive environment, as well as others.

Windows-based environment module **216** presents applications and accompanying content through windows having frames. These frames provide controls through which to interact with an application and/or controls enabling a user to move and size the window.

Immersive environment module **218** provides an environment by which a user may view and interact with one or more of applications **212** and corresponding content **214**. In some embodiments, this environment presents content of, and enables interaction with, applications with little or no window frame and/or without a need for a user to manually size or position content. This environment can be, but is not required to be, hosted and/or surfaced without use of a typical desktop environment. Thus, in some cases immersive environment module **218** presents an immersive environment that is not a window (even one without a substantial frame) and precludes usage of desktop-like displays (e.g., a taskbar). Further still, in some embodiments this immersive environment is similar to an operating system in that it is not closeable or capable of being un-installed. Examples of immersive environments are provided below as part of describing the techniques, though they are not exhaustive or intended to limit the techniques.

Reporter **210** includes, has access to, or generates an application-selectable user interface **220**, an example of which is shown at **112** in FIG. **1**. Interface **220** includes or has access to presentation formats **222**. Reporter **210** reports changes associated with one or more of applications **212** through interface **220**. As noted above, reports **110** may be received directly from one or more of applications **212**, or another entity associated with one or more of applications **212**, such as remote provider **104** or report compiler **106**.

In some cases a report indicates which presentation format **222** is intended, in which case reporter **210** reports changes in the appropriate format through interface **220**. Presentation formats **222** can be eXtensible Stylesheet Language Transformations (XSLT) in cases where reports **110** are received in eXtensible Markup Language (XML). In such a case, reporting in interface **220** is presenting using Hyper-Text Markup Language (HTML), though use of XSLT, XML, and HTML are optional, as are presentation formats **222** in general.

FIG. **3** illustrates example embodiments of remote provider **104**. Remote provider **104** is shown as a singular entity for visual brevity, though multiple remote providers are also contemplated herein. Remote provider **104** includes or has to access to provider processor(s) **302** and provider computer-readable storage media **304** (media **304**). Media **304** includes report generator **306** and content provider **308**.

Report generator **306** is capable of providing one or more reports **110** to computing device **102**, either directly or indirectly through report compiler **106**. In some embodiments, reports **110** include information useful for indicating a change, presenting content associated with the change, or visiting the application (e.g., with universal resource locators (URLs)).

Report generator **306** may act responsive to reporter **210**, such as a request from reporter **210** for reports **110**, though report generator **306** may also act to periodically send, or consistently make available, new and/or interesting content or data as it become available. Report generator **306** may indicate what is new since a user last selected a particular application, though it may also simply provide reports **110**, with which reporter **210** may instead determine what is or is not new.

Content provider **308** provides content, such as content **214** associated with application **212**. Content provider **308** may act in conjunction with report generator **306**, such as to provide content **214** to report generator **306**, which report generator **306** then provides a portion of (or sometimes all of) in report **110**.

FIG. **4** illustrates an example embodiment of report compiler **106**. Report compiler **106** is shown as a singular entity for visual brevity, though multiple compilers may also be used. Report compiler **106** includes or has to access to compiler processor(s) **402** and compiler computer-readable storage media **404** (media **404**). Media **404** includes compiling module **406**, which is capable of receiving and compiling reports **110** from one or more sources, such as report provider **104**. Compiling module **406** may receive reports for later provision to computing device **102**, such as periodically or

when computing device **102** indicates that it is on. Compiling module **406** may determine which changes are new since a particular user last viewed content from an application and provide those of the reports **110** indicating these changes.

Ways in which entities of FIGS. **1-4** act and interact are set forth in greater detail below. The entities illustrated for computing device **102**, remote provider **104**, or report compiler **106**, respectively, can be separate or integrated.

Example Methods

FIG. **5** depicts a method **500** for application reporting in an application-selectable user interface. In portions of the following discussion reference may be made to environment **100** of FIG. **1** and as detailed in FIGS. **2-4**, reference to which is made for example only.

Block **502** presents a user interface having multiple, selectable labels associated with multiple applications, respectively. One of the multiple selectable labels reports a change associated with the application to which the selectable label is associated, though multiple changes for multiple applications or the same application may also be reported. Reporting of one or more changes is not required (e.g., at some times none of the applications will have a change to report).

By way of example, consider a case where reporter **210** of FIG. **2** presents a user interface **600** shown in FIG. **6**. This user interface **600** is but one of many types of user interfaces contemplated by user interface **220** of FIG. **2**, including a user interface having a single label. User interface **600** includes fifteen selectable labels, twelve of them relatively large and three relatively small.

This example user interface **600** reports changes to eleven of the twelve larger labels and one of the three small labels, though any variation of such a presentation is contemplated, such as changes to all or none of the selectable labels. Note that these changes, even if all of these changes were already received at the time a user selects to view user interface **600**, may be presented to each of the various labels and portions of the labels progressively. This progressive alteration of the labels can make user interface **600** look animated. Thus, the changes to the labels are not necessarily made all at once.

Further, in cases where multiple changes for an application are known, reporter **210** may present the newest of the changes or rotate through these changes. Reporter **210** may rotate through changes to maintain a "live" feel to user interface **600** or responsive to activity or inactivity with a label. Inactively with a label may indicate that the currently-indicated change is not of interest to a user. As another of the changes may be of more interest, the most-recent change may be rotated off of a label and an older (but still new) change rotated on to the label.

Consider first selectable label **602**, which is shown expanded in FIG. **6**. This selectable label **602** is associated with one of applications **212** of FIG. **2**, namely a "News" application. As shown, selectable label **602** reports a change associated with this application **212** within selectable label **602**, the change relative to a prior viewing, selection, or launching of this application **212** by a user associated with computing device **102**.

Assume that a user viewed the News application at 9 am and, on viewing user interface **600**, is presented with selectable label **602** reporting a change to the News application since 9 am (at 3 pm the same day, for example). Here the change is a new article concerning a weather satellite that has been damaged by a meteor and may crash to earth. Portions of content associated with the change (the change being the new article) are shown in selectable label **602**. These portions each report the change by indicating that a new article is now available, here with an image **604** of a satellite, a title of the article at **606**, and a first sentence of the article at **608**.

Consider also three other example selectable labels, small selectable labels **610** and **612**, and another of the large selectable labels **614**. Small selectable label **610** reports a change to an application associated with this label, namely the "ASN" application. Label **610** reports a change with a change indicator **616** marked as "*", though this indicator **616** does not indicate how many changes or any content associated with that change. This abbreviated report on a change may be desirable when the application associated with the label is not generally important to the user, or changes are often of a similar type and thus presenting content of the change is not meaningful, or simply because the user desires it.

Small selectable label **612**, on the other hand, does not report any changes. This non-reporting provides the user with valuable information, namely that the user need not select label **612** to see something new for the "Duke" application, as no changes exist since the user last visited the application.

Large selectable label **614** also does not report any changes, thus also providing the user with valuable information concerning changes (or lack thereof) for the "CSI" application.

As described, reporter **210** enables selection of applications and reports changes to those applications. Reporter **210** may also enable different selections through different areas of a label. Consider again label **602**. Here reporter **210** enables selection through application-identifying area **618** and reporting area **620**. This application-identifying area **618** shows an application-selected identifier for the "News" application at **622**, namely "News" in a particular font and color (color not shown). Reporter **210** enables a selection made to this application-identifying area **618** to present the "News" application at a default or prior-viewed setting, such as a home page or a last-viewed page of content. Thus, on selection of application-identifying area **618**, reporter **210** may refrain from presenting content associated with the reported change.

Reporter **210** enables a selection made to reporting area **620** to present the "News" application with the change, such as presenting content associated with the change, here opening a webpage at a universal resource locator (URL) associated with the content change. In such a case, reporter **210** presents the News application having the article that was shown in part in reporting area **620**.

Some labels may indicate multiple changes, such as reporting (with some associated content) the two newest entries to a social-networking website or emails received since the user last viewed an email application. In such a case, reporter **210** enables selection to each section reporting the change to present the associated application with content associated with that change, such as to open one of multiple emails reported.

By way of review, reporter **210** can report changes to various applications responsive to received reports, such as reports **110** of FIG. **1**, which can be received one-at-a-time, after compiling into batches, and/or from various sources. These reports **110** can be received or retrieved periodically, on selecting to display user interface **220**, and/or in real time. User interface **600**, for example, may alter selectable labels as a user views it due to reports coming in and being reported. Thus, reporter **210** may act to actively update reporting for applications in a user interface through which a user can select applications.

Reporter **210** may determine which reports **110** indicate changes to an application since the user last viewed or interacted with the application, though in some other cases an

entity providing the report instead determines this (e.g., remote provider **104**, report compiler **106**, or application **212**).

Further, in some embodiments reporter **210** receives reports along with an indication of a presentation format in which the reports are preferred to be presented. This presentation format preference may be selected by an entity associated with the respective application, such as a social-networking server associated with a social-networking application, or based on user preference. Various examples of presentation formats **222** are illustrated in FIG. **6**. Large selectable label **602**, for example, presents only a most-recent change along with three portions of content for that change. Small selectable label **610**, conversely, presents only a change indicator **616** with no content.

Returning to method **500**, block **504** receives selection of one of the multiple, selectable labels, such as a label reporting a change. The selection received can be to various areas (or sections of areas) of a selectable label, responsive to which reporter **210** presents the application associated with the selectable label, though how presented may vary based on which area is selected. As noted, the application associated with a selectable label may or may not be executing. Consider, for example, large selectable label **602** and another large selectable label **622**. Label **602** is associated with a "News" application of applications **212** of FIG. **2**. Label **622** is associated with an email application of applications **212**. For this example, assume that the News application is not executing and that reports are received from a remote entity associated with the News application, such as remote provider **104**. Assume also that the email application is local to computing device **102** and is executing. Reports **110** for the email application are received by reporter **210** direct from the email application.

Continuing the ongoing embodiment, assume that reporter **210** receives a selection to application-identifying area **618**, such as through a mouse selector or a gesture via a touch-screen displaying user interface **600**, such as one of displays **206** shown in FIG. **2**.

Block **506** presents the application associated with the selected label and/or content associated with a change reported in the selected label. When block **506** presents the application, it does so in a manner in which the application may be interacted with, e.g., in an immersive or windows-based environment. This presentation may also or instead present content associated with a reported change but not necessarily the application itself as described in further detail below.

This presentation may include launching the application and then presenting it, such as in a window via windows-based environment module **216** or in an immersive environment via immersive environment module **218**, both of FIG. **2**. If the application is already executing, a launch is not needed. Responsive to receiving a selection of a selected label, the techniques may provide a visual indication of the selection, such as to animate the selected portion of the label. By so doing, the techniques reinforce the type of selection.

Concluding the ongoing embodiment, reporter **210** presents the News application in response to selection of selectable label **602**, here to application-identifying area **618**. This presentation includes launching the News application, as it was not executing at selection. As noted, reporter **210** may present and/or launch an application through an instruction to another entity, such as the above-mentioned modules **216** or **218**.

FIG. **7** illustrates an example presentation of the News application in an immersive environment **700**. Because application-identifying area **618** was selected, a default presentation (here a home page) for the News application is shown. This home page is shown at **702** and includes various headlines **704** for selection, one of which is the most-recent article also shown at **606** in FIG. **6**. While this title is shown, the home page is presented rather than a webpage having a full representation of the content or otherwise devoted to the article, which would otherwise be presented had the selection been made to reporting area **620**.

By way of another example, consider a case where selection is received at block **504** through large selectable label **622** of FIG. **6**, which is expanded for clarity in FIG. **8**. Label **622** is shown having an application-identifying area **802** and a reporting area **804**. Reporting area **804** includes four selectable sections reporting changes, sections **806**, **808**, **810**, and **812**. Each of selectable sections **806**, **808**, and **810** reports content associated with a change, here each a sender and a subject line of an email. Section **812** reports five changes, here that five other emails have also been received since the email application was last viewed by the user. In this example, selection is received to section **808** through a gesture **814** made to a touch screen.

Reporter **210**, at block **506**, presents the selected email application and content of the email associated with the selection. Here the application is currently executing, therefore reporter **210** does not launch the email application. Presentation of the email application and the change reported, rather than a home or default presentation, is shown in FIG. **9** at **902** in a window **904**. Note that reporter **210** may cause this presentation in a window superimposed over the application-selectable user interface or hide the user interface and present the window in a different environment. Here reporter **210** hides the user interface and presents the email application at **902** showing content associated with the selection received at **906**.

In still another example, consider again FIG. **8**. In some cases selection made to a selectable label indicating a change may present content associated with that change. This presentation may be commensurate with presentation of the application as described above. In some other cases, the content is shown without hiding the user interface and/or without presenting the application in a conventional manner. Assume, for the selection **814** of FIG. **8**, that reporter **210**, rather than presenting the email application and the content, instead presents content associated with the change on its own. In this case, more or all of the content associated with that change is shown. Assume, for example, that most or all of the content associated with a new email from Sue was received in one of the reports **110**. Reporter **210** may present the rest of this content, such as within or superimposed over user interface **600**.

An example of this is shown in FIG. **10**, which shows a pop-up window **1002** having more content associated with a reported change. This may also be used to expand the "5 More Emails" shown at section **812** in FIG. **8** to show, for example, the sender and subject lines for those emails. This may be used to show some content associated with a change for which no content is currently shown, such as change indicator **616** of FIG. **6**. This alternative operation of block **506** permits a user to select to see more content associated with a change, which in some cases is enough for the user to forgo selecting the application generally.

The preceding discussion describes methods for application reporting in an application-selectable user interface. These methods are shown as sets of blocks that specify operations performed but are not necessarily limited to the order shown for performing the operations by the respective blocks.

Aspects of these methods may be implemented in hardware (e.g., fixed logic circuitry), firmware, software, manual processing, or any combination thereof A software implementation represents program code that performs specified tasks when executed by a computer processor. The example methods may be described in the general context of computer-executable instructions, which can include software, applications, routines, programs, objects, components, data structures, procedures, modules, functions, and the like. The program code can be stored in one or more computer-readable memory devices, both local and/or remote to a computer processor. The methods may also be practiced in a distributed computing environment by multiple computing devices.

These techniques may be embodied on one or more of the entities shown in environment **100** of FIG. **1** (and as detailed in FIGS. **2-4**) and/or example device **1100** described below, which may be further divided, combined, and so on. Thus, environment **100** and/or device **1100** illustrate some of many possible systems or apparatuses capable of employing the described techniques. The entities of environment **100** and/or device **1100** generally represent software, firmware, hardware, whole devices or networks, or a combination thereof In the case of a software implementation, for instance, the entities (e.g., reporter **210** of FIG. **2**, report generator **306** of FIG. **3**, and compiling module **406** of FIG. **4**) represent program code that performs specified tasks when executed on a processor (e.g., processor(s) **202**, **302**, and **402**, respectively). The program code can be stored in one or more computer-readable memory devices, such as computer-readable storage media **204**, **304**, or **404** or computer-readable media **1114** of FIG. **11**. The features and techniques described herein are platform-independent, meaning that they may be implemented on a variety of commercial computing platforms having a variety of processors.

Example Apparatus

FIG. **11** illustrates an apparatus having various components, here as part of an example device **1100**, which can be implemented as any type of client, server, and/or computing device as described with reference to the previous FIGS. **1-10** to implement techniques for application reporting in an application-selectable user interface. In embodiments, device **1100** can be implemented as one or a combination of a wired and/or wireless device, as a form of television client device (e.g., television set-top box, digital video recorder (DVR), etc.), consumer device, computer device, server device, portable computer device, user device, communication device, video processing and/or rendering device, appliance device, gaming device, electronic device, and/or as another type of device. Device **1100** may also be associated with a user (e.g., a person) and/or an entity that operates the device such that a device describes logical devices that include users, software, firmware, and/or a combination of devices.

Device **1100** includes communication devices **1102** that enable wired and/or wireless communication of device data **1104** (e.g., received data, data that is being received, data scheduled for broadcast, data packets of the data, etc.). The device data **1104** or other device content can include configuration settings of the device, media content stored on the device, and/or information associated with a user of the device. Media content stored on device **1100** can include any type of audio, video, and/or image data. Device **1100** includes one or more data inputs **1106** via which any type of data, media content, and/or inputs can be received, such as user-selectable inputs, messages, music, television media content, recorded video content, and any other type of audio, video, and/or image data received from any content and/or data source.

Device **1100** also includes communication interfaces **1108**, which can be implemented as any one or more of a serial and/or parallel interface, a wireless interface, any type of network interface, a modem, and as any other type of communication interface. The communication interfaces **1108** provide a connection and/or communication links between device **1100** and a communication network by which other electronic, computing, and communication devices communicate data with device **1100**.

Device **1100** includes one or more processors **1110** (e.g., any of microprocessors, controllers, and the like), which process various computer-executable instructions to control the operation of device **1100** and to enable application reporting in an application-selectable interface. Alternatively or in addition, device **1100** can be implemented with any one or combination of hardware, firmware, or fixed logic circuitry that is implemented in connection with processing and control circuits which are generally identified at **1112**. Although not shown, device **1100** can include a system bus or data transfer system that couples the various components within the device. A system bus can include any one or combination of different bus structures, such as a memory bus or memory controller, a peripheral bus, a universal serial bus, and/or a processor or local bus that utilizes any of a variety of bus architectures.

Device **1100** also includes computer-readable storage media **1114**, such as one or more memory devices that enable persistent and/or non-transitory data storage (i.e., in contrast to mere signal transmission), examples of which include random access memory (RAM), non-volatile memory (e.g., any one or more of a read-only memory (ROM), flash memory, EPROM, EEPROM, etc.), and a disk storage device. A disk storage device may be implemented as any type of magnetic or optical storage device, such as a hard disk drive, a recordable and/or rewriteable compact disc (CD), any type of a digital versatile disc (DVD), and the like. Device **1100** can also include a mass storage media device **1116**.

Computer-readable storage media **1114** provides data storage mechanisms to store the device data **1104**, as well as various device applications **1118** and any other types of information and/or data related to operational aspects of device **1100**. For example, an operating system **1120** can be maintained as a computer application with the computer-readable storage media **1114** and executed on processors **1110**. The device applications **1118** may include a device manager, such as any form of a control application, software application, signal-processing and control module, code that is native to a particular device, a hardware abstraction layer for a particular device, and so on.

The device applications **1118** also include any system components or modules to implement techniques for application reporting in an application-selectable user interface. In this example, the device applications **1118** can include reporter **210** and applications **212**.

CONCLUSION

Although embodiments of techniques and apparatuses for application reporting in an application-selectable user interface have been described in language specific to features and/or methods, it is to be understood that the subject of the appended claims is not necessarily limited to the specific features or methods described. Rather, the specific features and methods are disclosed as example implementations for application reporting in an application-selectable user interface.

What is claimed is:

1. A computing device comprising:

one or more computer processors; and

one or more computer-readable storage media having instructions stored thereon that, responsive to execution by the one or more computer processors, perform operations comprising:

presenting a user interface having multiple selectable labels associated with multiple applications, respectively, at least one of the multiple selectable labels:

reporting a first change in a first area of the selectable label, the first change associated with first content of the application to which the selectable label is associated; and

reporting a second change in a second area of the selectable label, the second change associated with second content of the application to which the selectable label is associated;

receiving selection of the one of the multiple selectable labels through the first area or the second area; and

responsive to selection of the selected label, presenting, through the application associated with the selected label, the first content responsive to selection of the first area or the second content responsive to selection of the second area.

2. A computing device as described in claim **1**, wherein another of the multiple selectable labels includes an area that reports a change and another area that does not report the change and further comprising, on selection of the other area that does not report the change, presenting the other selected application in a default presentation of the other selected application not presenting content associated with the change.

3. A computing device as described in claim **1**, wherein reporting the first or second changes presents a portion of the first or second content associated with the first or second changes, respectively, within the selectable label.

4. A computing device as described in claim **1**, the operations further comprising:

receiving a report indicating a third change, the third change associated with one of the multiple applications; and

altering one of the multiple, selectable labels to report the third change.

5. A computing device as described in claim **4**, wherein the third change is associated with a different one of the multiple applications than the application associated with the selected label.

6. A computing device as described in claim **1**, wherein the application associated with the selected label is executing prior to presenting the application associated with the selected label and further comprising receiving a report having the change from the application associated with the selected label.

7. A computing device as described in claim **1**, wherein the application associated with the selected label is not executing prior to presenting the application associated with the selected label and further comprising receiving a report having the change from a remote entity associated with the application associated with the selected label.

8. A computing device as described in claim **1**, wherein the first or second change is a change to content of the application associated with the selected label relative to a most-recent prior presentation of the application associated with the selected label.

9. A computing device as described in claim **1**, wherein the application associated with the selected label, when selected, is not executing, and wherein presenting the application associated with the selected label includes launching the application.

10. A computing device comprising:

one or more computer processors; and

one or more computer-readable storage media having instructions stored thereon that, responsive to execution by the one or more computer processors, perform operations comprising:

enabling, through a single user interface, selection of two or more applications through selectable labels associated with each of the two or more applications, the selectable labels each having multiple areas reporting respective multiple changes to the applications to which each is associated; and

responsive to selection of one of the multiple areas in one of the selectable labels, causing content to be presented, the content associated with the change reported in the selected one of the multiple areas.

11. A computing device as described in claim **10**, wherein causing the content associated with the change to be presented presents the content within or superimposed over the user interface.

12. A computing device as described in claim **10**, wherein causing the content associated with the change to be presented executes the selected application and hides the user interface.

13. A computer-implemented method comprising:

receiving a first report for a first application, the first report indicating a change to the first application;

receiving a second report for a second application, the second report indicating a change to the second application;

receiving a third report for the first application, the third report indicating another change to the first application;

receiving a fourth report for the second application, the fourth report indicating another change to the second application;

presenting a user interface having first and second selectable labels, the first selectable label associated with the first application and reporting the changes, in respective areas of the first selectable label, to the first application, the second selectable label associated with the second application and reporting the changes in respective areas of the second selectable label, to the second application;

receiving selection of the first or second selectable label through one of the respective areas of the first or second selectable label in which one of the changes to the first or second application, respectively, is indicated; and

responsive to selection of the selected first or second selectable label, presenting the selected first or second application associated with the selected first or second selectable label, the presenting showing content associated with the one of the changes to the first or second application indicated in the one of the respective areas through which the selected first or second selectable label is selected.

14. A computer-implemented method as described in claim **13**, wherein presenting the user interface reporting the changes to the first application includes portions of content associated with the changes to the first application and within the first selectable label.

15. A computer-implemented method as described in claim **13**, wherein the first application is executing when the first report is received and the second application is not executing when the second report is received.

16. A computer-implemented method as described in claim 13, further comprising receiving, after presenting the user interface, a fifth report associated with a third change to the first application and further comprising reporting the third change within the first selectable label by rotating off one of the changes to the first application.

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